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MENBERU, BENIYAM	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/843,406

Applicant(s)

ZENG, HUANZHAO

Examiner

Beniyam Menberu

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-13 and 27 is/are allowed.
- 6) ☒ Claim(s) 1, 14-26 and 28-32 is/are rejected.
- 7) ☒ Claim(s) 2-13 and 27 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Response to Arguments

1. Applicant's arguments, see pages 13-17, filed February 22, 2005, with respect to the rejection(s) of claim(s) 1, 16, and 26 under U.S. Patent No. 6778300 to Kohler and claims 19, 20, 21, 25, 28, 29, 30, and 32 under U.S. Patent No. 6778300 to Kohler in view of U.S. Patent No. 6480299 to Drakopoulos et al further in view of U.S. Patent No. 6088038 to Edge et al been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of U.S. Patent No. 6775030 to Krabbenhöft et al in view of U.S. Patent No. 6788305 to Ohga for claims 1 and 26 and U.S. Patent No. 6775030 to Krabbenhöft et al in view of U.S. Patent No. 6480299 to Drakopoulos et al for claims 28-30 and U.S. Patent No. 6788305 to Ohga in view of U.S. Patent No. 6775030 to Krabbenhöft et al further in view of U.S. Patent No. 6480299 to Drakopoulos et al for claim 32.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6775030 to Krabbenhöft et al in view of U.S. Patent No. 6788305 to Ohga.

Regarding claims 1, Krabbenhöft et al discloses an open color management system comprising:

- an input color profile for each input device (column 5, lines 31-40);
- an output color profile for each output device (column 5, lines 46-49);
- and an open color manager to link a given input device with a selected output device , including a configuration to parse an input color space data set comprising black channel data plus multiple color channels data with the input and output color profiles at a job time to create a profile connection space including transformed multiple color channels plus the input black channel data to provide an output color space data set comprising the input black channel data plus the transformed multiple color channels for imaging by said selected output device while substantially preserving the input black channel data (column 8, lines 28-67; column 9, lines 1-2). However Krabbenhöft does not disclose allowing any of a plurality of input color devices to share data with any of a plurality of output color devices comprising:
- a networked connection space for input and output device communication.

Ohga discloses allowing any of a plurality of input color devices to share data with any of a plurality of output color devices comprising (column 2, lines 42-64):

- a networked connection space for input and output device communication (column 1, lines 16-29; column 2, lines 65-67; column 3, lines 1-20);

Krabbenhöft et al and Ohga are combinable because they are in the similar problem area of color printing.

Art Unit: 2626

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the network sharing of device profile of Ohga with the system of Krabbenhöft et al to implement network implemented sharing of device profiles for color printing.

The motivation to combine the reference is clear because devices that are located remotely can share profiles using the system of Ohga.

Regarding claim 26, Krabbenhöft et al disclose a method for open color management comprising:

processing an input color data set comprising black plus multiple color channels; and passing output color data with substantially preserved black channel levels to said selected output color device (column 8, lines 28-67; column 9, lines 1-2). However Krabbenhöft et al does not disclose connecting a plurality of input devices and a plurality of output devices to a network space; initiating contact with a selected output device by a given input device; linking an input color profile with an output color profile over the network space.

Ohga discloses connecting a plurality of input devices and a plurality of output devices to a network space (column 2, lines 42-64); initiating contact with a selected output device by a given input device (column 4, lines 3-12); linking an input color profile with an output color profile over the network space (column 1, lines 16-29; column 2, lines 65-67; column 3, lines 1-20).

Krabbenhöft et al and Ohga are combinable because they are in the similar problem area of color printing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the network sharing of device profile of Ohga with the system of Krabbenhöft et al to implement network implemented sharing of device profiles for color printing.

The motivation to combine the reference is clear because devices that are located remotely can share profiles using the system of Ohga.

4. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6775030 to Krabbenhöft et al in view of U.S. Patent No. 6788305 to Ohga further in view of U.S. Patent No. 6697167 to Takahashi.

Regarding claim 14, Krabbenhöft et al in view of Ohga teaches all the limitations of claim 1. Krabbenhöft et al discloses input color space of the CMYK space (column 8, lines 35-40). However Krabbenhöft et al in view of Ohga does not disclose an open color management system as in claim 1 wherein said input color space dataset is further selected from the group consisting of SWOP CMYK, and Euro CMYK.

Takahashi discloses color samples for printing calibration wherein samples are of the form SWOP CMYK and Euro CMYK (Figures 31b, 31d; column 26, lines 37-42).

Krabbenhöft et al, Ohga, and Takahashi are combinable because they are in the similar problem area of color printing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the SWOP CMYK and Euro CMYK of Takahashi with the color print system of Krabbenhöft et al in view of Ohga.

The motivation to combine the reference is clear because Takahashi suggests the popularity of such color space by users (Column 25, lines 40-45).

5. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6775030 to Krabbenhöft et al in view of U.S. Patent No. 6788305 to Ohga further in view of U.S. Patent No. 6595612 to Brown et al.

Regarding claim 15, Krabbenhöft et al in view of Ohga teaches all the limitations of claim 1. Krabbenhöft et al discloses an open color manager which outputs CMYK color space (column 8, lines 40-45). However Krabbenhöft et al does not disclose an open color management system as in claim 1 wherein said output color space dataset is further selected from the group consisting of CMYK-plus-light magenta-plus-light cyan, and CMYK-plus-orange-plus green.

Brown et al disclose an open color management system wherein said output color space dataset is further selected from the group consisting of CMYK-plus-light magenta-plus-light cyan, and CMYK-plus-orange-plus green (column 1, lines 41-49).

Krabbenhöft et al, Ohga, and Brown et al are combinable because they are in the similar problem area of color printing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the CMYK output of Brown et al with the system of Krabbenhöft et al in view of Ohga to implement six color image printing.

The motivation to combine the reference is clear because Brown et al teaches that using the extra colors in addition to CMYK can increase the gamut (column 10, lines 33-37).

6. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6775030 to Krabbenhöft et al in view of U.S. Patent No. 6788305 to Ohga further in view of U.S. Patent No. 6778300 to Kohler.

Regarding claim 16, Krabbenhöft et al in view of Ohga teaches all the limitations of claim 1. However Krabbenhöft et al in view of Ohga does not disclose an open color management system as in claim 1 wherein: said given input device is personal computers and said selected output device is selected from the group consisting of inkjet printers.

Kohler discloses an open color management system as in claim 1 wherein: said given input device is personal computers (Figure 1, reference 41) and said selected output device is selected from the group consisting of inkjet printers (Figure 1, reference 50; column 5, lines 54-56).

Krabbenhöft et al, Ohga, and Kohler are combinable because they are in the similar problem area of color printing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the open color manager of Kohler with the color print system of Krabbenhöft et al in view of Ohga to implement the interconnection of plurality of devices for color printing.

The motivation to combine the reference is clear because a personal computer can be useful to generate color images which can be printed using the open color manager.

7. Claims 17-21 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6775030 to Krabbenhöft et al in view of U.S. Patent No. 6788305 to Ohga further in view of U.S. Patent No. 6480299 to Drakopoulos et al.

Regarding claim 17, Krabbenhöft et al in view of Ohga teaches all the limitations of claim 1. Krabbenhöft et al discloses an open color management system as in claim 1, wherein said input color profile further comprises: input look-up table for conversion from said input color space dataset to a profile connection space while preserving any input black information (column 8, lines 28-35, lines 50-55). However, Krabbenhöft et al does not disclose color profile further comprising an input gamut surface data set.

Drakopoulos et al disclose color profile further comprising an input gamut surface data set (column 13, lines 28-35; column 14, lines 48-50).

Krabbenhöft et al, Ohga, and Drakopoulos et al are combinable because they are in the similar problem area of color printing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the gamut surface data set of Drakopoulos et al with the system of Krabbenhöft et al in view of Ohga to implement a robust color management system.

The motivation to combine the reference is clear because the gamut surface data is necessary for accurate printing as taught by Drakopoulos (column 13, lines 35-

41).

Regarding claim 18, Krabbenhöft et al in view of Ohga further in view of Drakopoulos et al teach all the limitations of claim 17. Further, Krabbenhöft et al in view of Ohga further in view of Drakopoulos et al disclose an open color management system as in claim 17, wherein said output color profile further comprises: an output gamut surface data set (Drakopoulos et al: column 13, lines 28-33; column 14, lines 48-50); an output look-up table for conversion from said output color space dataset to said profile connection space while preserving any output black information (Krabbenhöft et al: column 6, lines 23-37; column 8, lines 28-35). Drakopoulos et al disclose color profile further comprising an output ink limit dataset to be used in conjunction with said output gamut surface data set (column 16, lines 5-14; column 17, lines 20-34).

Regarding claims 19, Krabbenhöft et al in view of Ohga further in view of Drakopoulos et al teach all the limitations of claim 18. Regarding claim 19, Krabbenhöft et al in view of Ohga further in view of Drakopoulos et al disclose an open color management system, wherein said open color manager further comprises: a processing means for transforming said input color space dataset to said profile connection space and said input black information (Krabbenhöft et al : column 6, lines 13-17; column 5, lines 35-45). Further Drakopoulos et al disclose an optional processing means for applying said optional output ink limit data set to said gamut mapping function to optimize said gamut mapping function (Drakopoulos et al: column 16, lines 5-14; column 17, lines 20-34). Further Drakopoulos et al disclose a processing means

Art Unit: 2626

for comparing, in said profile connection space, said input gamut surface data set with said output gamut surface data set to determine a gamut mapping function

(Drakopoulos et al: column 14, lines 48-54, lines 58-65) and a black mapping function (Krabbenhöft et al: column 6, lines 1-13);

a processing means for applying said black mapping function to said input black information to determine said output black information, thereby enabling direct control of said output black information by adjusting said input black information (Krabbenhöft et al: column 5, lines 35-67; column 6, lines 1-12). Further Drakopoulos et al disclose a processing means for adjusting said profile connection space data from said given input device to said selected output device by applying said gamut mapping function (Drakopoulos et al: column 14, 58-65). Further Krabbenhöft et al disclose a processing means for converting said gamut-adjusted profile connection space data to said output color space dataset by applying said output lookup table from said output color profile in conjunction with said output black information (Krabbenhöft et al: column 7, lines 55-67; column 8, lines 1-10; column 6, lines 55-67; The K_2 in equation 1 on column 6, line 5 represents the output black information.).

Regarding claim 20, Krabbenhöft et al in view of Ohga further in view of Drakopoulos et al teach all the limitations of claim 19. Further, Edge et al disclose an open color management system as in claim 19, wherein said profile connection space is CIE L^*a^*b (column 4, lines 28-31).

Regarding claims 21, Krabbenhöft et al in view of Ohga further in view of Drakopoulos et al teach all the limitations of claim 19. Further, Edge et al disclose an

Art Unit: 2626

open color management system as in claim 19, wherein said profile connection space is CIE XYZ (column 11, lines 63-66).

Regarding claim 25, Krabbenhöft et al in view of Ohga further in view of Drakopoulos et al teach all the limitations of claim 19. Krabbenhöft et al in view of Ohga further in view of Drakopoulos et al does not disclose an open color management system wherein:

said given input device is selected from the group consisting of electronic displays, digital cameras, scanners, personal computers, laptops, hand-held computers, and graphic arts software running on a processor (Ohga: column 2, lines 57-61); and said selected output device is selected from the group consisting of inkjet printers, electrophotographic printers, and lithographic printers (Drakopoulos et al: column 11, lines 33-39).

8. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6775030 to Krabbenhöft et al in view of U.S. Patent No. 6788305 to Ohga further in view of U.S. Patent No. 6480299 to Drakopoulos et al further in view of U.S. Patent No. 6633668 to Newman.

Regarding claim 22, Krabbenhöft et al in view of Ohga further in view of Drakopoulos et al teach all the limitations of claim 19. However Krabbenhöft et al in view of Ohga further in view of Drakopoulos et al does not disclose a profile connection space which is CIE CAM97 JAB.

Newman discloses a profile connection space which is CIE CAM97 Jab (column 3, lines 3-11).

Krabbenhöft et al, Ohga, Drakopoulos et al, and Newman are combinable because they are in the similar problem area of color printing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the profile connection space specified by Newman with the system of Krabbenhöft et al in view of Ohga further in view of Drakopoulos et al.

The motivation to combine the reference is clear because Newman teaches that the CIE CAM97 Jab color space is preferred for viewing condition that is independent (column 8, lines 16-20).

9. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6775030 to Krabbenhöft et al in view of U.S. Patent No. 6788305 to Ohga further in view of U.S. Patent No. 6480299 to Drakopoulos et al further in view of U.S. Patent No. 6697167 to Takahashi.

Regarding claim 23, Krabbenhöft et al in view of Ohga further in view of Drakopoulos et al teach all the limitations of claim 19. However Krabbenhöft et al in view of Ohga further in view of Drakopoulos et al teach does not disclose input color space dataset further selected from the group consisting of SWOP CMYK, and Euro CMYK.

Takahashi discloses color samples for printing calibration wherein samples are of the form SWOP CMYK and Euro CMYK (Figures 31b, 31d; column 26, lines 37-42).

Krabbenhöft et al, Ohga, Drakopoulos et al, and Takahashi are combinable because they are in the similar problem area of color printing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the SWOP and EURO CMYK color space taught by Takahashi as input to the system of Krabbenhöft et al in view of Ohga further in view of Drakopoulos et al.

The motivation to combine the reference is clear because Takahashi suggests the popularity of such color space by users (Column 25, lines 40-45).

10. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6775030 to Krabbenhöft et al in view of U.S. Patent No. 6788305 to Ohga further in view of U.S. Patent No. 6480299 to Drakopoulos et al further in view of U.S. Patent No. 6595612 to Brown et al.

Regarding claim 24, Krabbenhöft et al in view of Ohga further in view of Drakopoulos et al teach all the limitations of claim 19. However Krabbenhöft et al in view of Ohga further in view of Drakopoulos et al does not disclose wherein said output color space dataset is further selected from the group consisting of CMYK-plus-light magenta-plus-light cyan, and CMYK-plus-orange-plus green.

Brown et al disclose an open color management system wherein said output color space dataset is further selected from the group consisting of CMYK-plus-light magenta-plus-light cyan, and CMYK-plus-orange-plus green(column 1, lines 41-49).

Krabbenhöft et al, Ohga, Drakopoulos et al, and Brown et al are combinable because they are in the similar problem area of color printing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the CMYK-plus-light magenta-plus-light cyan, and CMYK-

plus-orange-plus green capabilities of Brown et al 's system into the combined system of Krabbenhöft et al, Ohga, Drakopoulos et al to implement six color image printing.

The motivation to combine the reference is clear because Brown et al teaches that using the extra colors in addition to CMYK can increase the gamut (column 10, lines 33-37).

11. Claims 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6775030 to Krabbenhöft et al in view of U.S. Patent No. 6480299 to Drakopoulos et al.

Regarding claim 28, Krabbenhöft et al disclose an open color manager for use in an open color management system comprising:

a processing means for transforming an input color space dataset to a profile connection space while maintaining input black information intact (column 8, lines 28-67);

a processing means for applying said black mapping function to said input black information to determine output black information, thereby enabling direct control of said output black information by adjusting said input black information (column 5, lines 35-67; column 6, lines 1-12).

a processing means for converting said gamut-adjusted profile connection space data to an output color space dataset by applying an associated output lookup table from an associated output color profile data structure in conjunction with said output black information (column 7, lines 5-67; column 8, lines 1-26). However Krabbenhöft et al does not disclose

Art Unit: 2626

a processing means for comparing, in said profile connection space, an input gamut surface data set with an output gamut surface data set to determine a gamut mapping function and a black mapping function;

an optional processing means for applying an optional output ink limit data set to said gamut mapping function to optimize said gamut mapping function;

a processing means for adjusting said profile connection space data, associated with said input color space dataset, to a gamut-adjusted profile connection space data by applying said gamut mapping function; and

Drakopoulos et al disclose :

a processing means for comparing, in said profile connection space, an input gamut surface data set with an output gamut surface data set to determine a gamut mapping function (Drakopoulos et al: column 14, lines 48-54, lines 58-65);

an optional processing means for applying an optional output ink limit data set to said gamut mapping function to optimize said gamut mapping function (Drakopoulos et al: column 16, lines 5-14; column 17, lines 20-34);

a processing means for adjusting said profile connection space data, associated with said input color space dataset, to a gamut-adjusted profile connection space data by applying said gamut mapping function (Drakopoulos et al: column 14, 58-65).

Krabbenhöft et al and Drakopoulos et al are combinable because they are in the similar problem area of color printing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the processing of Drakopoulos et al with the color print system of Krabbenhöft et al to implement gamut adjusted color printing.

The motivation to combine the reference is clear because Drakopoulos et al teaches that the processing is needed to control the printing of images in accordance with the printer's gamut (column 7, lines 1-10; column 8, lines 20-26).

Regarding claim 29, Krabbenhöft et al in view of Drakopoulos et al teach all the limitations of claim 28. Further Krabbenhöft et al disclose an open color manager according to claim 28, wherein said profile connection space is CIE L*a*b (column 8, lines 37-41).

Regarding claim 30, Krabbenhöft et al in view of Drakopoulos et al teach all the limitations of claim 28. Further Drakopoulos et al disclose an open color manager according to claim 28, wherein said profile connection space is CIE XYZ (column 10, lines 13-16).

12. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6775030 to Krabbenhöft et al in view of U.S. Patent No. 6480299 to Drakopoulos et al further in view of U.S. Patent No. 6633668 to Newman.

Regarding claim 31, Krabbenhöft et al in view of Drakopoulos et al teach all the limitations of claim 28. However, Krabbenhöft et al in view of Drakopoulos et al does not disclose a profile connection space which is CIE CAM97 Jab.

Newman discloses a profile connection space which is CIE CAM97 Jab (column 3, lines 3-11).

Krabbenhöft et al, Drakopoulos et al, and Newman are combinable because they are in the similar problem area of color printing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the profile connection space of Newman with the system of Krabbenhöft et al in view of Drakopoulos et al to implement CIE CAM97 JAB based color printing.

The motivation to combine the reference is clear because Newman teaches that the CIE CAM97 Jab color space is preferred for viewing condition that is independent (column 8, lines 16-20).

13. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6788305 to Ohga in view of U.S. Patent No. 6775030 to Krabbenhöft et al further in view of U.S. Patent No. 6480299 to Drakopoulos et al.

Regarding claim 32, Ohga disclose an open color management system allowing any of a plurality of input color devices to share data with any of a plurality of output color devices comprising (column 2, lines 42-64):

a networked connection space for input and output device communication (column 1, lines 16-29; column 2, lines 65-67; column 3, lines 1-20).

an input color profile for each input device (column 3, lines 12-15);

an output color profile for each output device (column 3, lines 15-19);

However Ohga does not disclose:

an input gamut surface data set; and

an output gamut surface data set; and

Art Unit: 2626

an input look-up table for conversion from said input color space dataset to CIE L*a*b* profile connection space without converting any input black information;

an output look-up table for conversion from said output color space dataset to said CIE L*a*b* profile connection space without converting any output black information ;

an open color manager comprising:

a processing means for transforming said input color space dataset to said CIE L*a*b* profile connection space and said input black information;

a processing means for comparing, in said CIE L*a*b* profile connection space, said input gamut surface data set with said output gamut surface data set to determine a gamut mapping function and a black mapping function;

a processing means for applying said black mapping function to said input black information to determine said output black information, thereby enabling direct control of said output black information by adjusting said input black information;

a processing means for adjusting said CIE L*a*b* profile connection space data from said given input device to said selected output device by applying said gamut mapping function; and

a processing means for converting said gamut-adjusted CIE L*a*b* profile connection space data to said output color space dataset by applying said output lookup table from said output color profile in conjunction with said output black information.

Krabbenhöft et al disclose an input look-up table for conversion from said input color space dataset to CIE L*a*b* profile connection space without converting any input

black information (column 6, lines 13-22; Figure 2a; reference S6; Krabbenhöft et al disclose conversion of CMY input data to LAB values without converting the K data.); an output look-up table for conversion from said output color space dataset to said CIE L*a*b* profile connection space without converting any output black information (column 6, lines 23-37; Figure 2b; reference S7);

Drakopoulos et al disclose an input/output color profile comprising:
an input gamut surface data set and an output gamut surface data set (column 13, lines 28-33; column 14, lines 48-50).

Regarding the open color manager, see claim 28.

Ohga, Krabbenhöft et al, and Drakopoulos et al are combinable because they are in the similar problem area of color printing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the color conversion of Krabbenhöft et al and the color profiling of Drakopoulos et al to implement color conversion with gamut surface analysis.

The motivation to combine the reference is clear because the gamut surface data is necessary for accurate printing as taught by Drakopoulos et al (column 13, lines 35-41).

Allowable Subject Matter

14. Claims 2-13 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other Prior Art Cited

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6434272 to Saarelma disclose image processing system.

U.S. Patent No. 6430311 to Kumada disclose image processing apparatus.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Beniyam Menberu whose telephone number is (571) 272-7465. The examiner can normally be reached on 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly Williams can be reached on (571) 272-7471. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is (571) 272-2600. The group receptionist number for TC 2600 is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

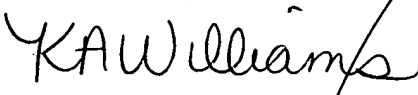
For more information about the PAIR system, see <http://pair-direct.uspto.gov/>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner

Beniyam Menberu

BM

06/10/2005


KIMBERLY WILLIAMS
SUPERVISORY PATENT EXAMINER